times be useful to distinguish the different types. Even though none of the prefixes proposed be thought worthy of general adoption by crystallographers, it is hoped that the desirability of some method of distinction of the several types will not be forgotten, and that in future descriptions of mimetic crystals it will rarely be considered sufficient to refer to them only by the prefix "*pseudo.*"

BOTANY.—*Synopsis of the genus Ochroma, with descriptions of new species.* W. W. ROWLEE, Cornell University. (Communicated by Frederick V. Coville.)

The utilization of the wood of *Ochroma* has brought that genus into prominence during the last few years. The manufacture of buoyancy and insulation products, such as life rafts, refrigerators, and parts of lifeboats and aeroplanes, especially in connection with the war, has become very extensive. Eighty thousand floats made of balsa wood were used in constructing the 250-mile submarine mine barrage in the North Sea; war vessels as well as transports were in so far as possible equipped with balsa life rafts and lifeboats; and special refrigerating trucks with balsa as the insulating material were used in France. The characteristics of the wood were investigated by the late Professor R. C. Carpenter in a very thorough manner and the results were published in a paper entitled *The properties of balsa wood.*[1] The importance of obtaining first-hand information regarding the quantity of wood available, and of discriminating between the usable and unusable wood, led the American Balsa Corporation to commission the writer and his son in April, 1918, to explore Central America with a view to finding out the amount of timber available and to investigate as to the quality of the wood and the kinds that grow in different regions. For this purpose we spent seven months in Panama, Costa Rica, Nicaragua, and Guatemala. The taxonomic results of the survey are given briefly in this paper.

The wood of the trees of the genus *Ochroma* is the most notable among lightweight woods. It is generally known in Spanish

[1] Trans. Amer. Soc. Civ. Eng. 81: 125. 1917.

America as "balsa," and that word has been transferred to and is in general use in the United States. Balsa is the Spanish word for raft, and it was applied to this tree because the Spanish colonists, when they migrated to the New World, found it in use by the natives for rafts. When they found a tree obviously related to an Old World species, the colonists usually transferred the European name to the new tree. Thus, "roble," the Spanish name for oak, was applied to like trees in the New World; but there was nothing in Spain in any way like balsa, and so the name of the object for which this wood was used was transferred to the tree itself. This name was and still is largely confined to countries where the trees were so used, that is, Ecuador, Colombia, and Costa Rica. In Nicaragua the tree is called "gatillo;" in Guatemala, "cajeto" on the west coast, and "moho" and "lana" on the east coast; in Cuba, "lanillo;" in Jamaica "corkwood" and "down tree," or as the Jamaican negroes have it, simply "dum." In these regions it is doubtful if it was ever used for rafts.

Balsa is a very common and conspicuous tree in tropical America. It is distinguished not only by its light soft wood, but also by its large simple leaves, large solitary flowers, and very conspicuous fruit, which is not unlike a cotton boll on a large scale. When the fruit is matured, but has not finally burst, it looks much like a rabbit's foot and presumably from this the first species of *Ochroma* to be described received the specific name "*lagopus*." When the fruit finally bursts and the mass of down falls to the earth, it suggests the fur of a rabbit. The seeds are enveloped in this fur and are disseminated by it. They resemble small grape seeds and, unlike cotton, the "down" is not firmly and permanently attached to the seed.

The tree of the Greater Antilles was first given a binary name, *Ochroma lagopus*, by the Swedish botanist, Olaf Swartz, in 1788[1] and was more fully described by him four years later.[2]

At about the same time Humboldt collected specimens of another species in the upper valley of the Magdalena River in

[1] Prodr. Veg. Ind. Occ. 98. 1788.

[2] Act. Stockh. 148. *pl. 6.* 1792. See also Swartz's later description, Fl. Ind. Occ. **2**: 1143. 1800.

Colombia and this was described by Willdenow under the name *Ochroma tomentosa*. This second species has never been found outside the region where Humboldt collected it. Swartz's type locality is "Jamaica, Hispaniola," but specimens from South America, Central America, and the West Indies have been universally referred to *O. lagopus*. These two species are the only ones recognized in botanical literature at the present time.

Ochroma is confined to tropical America. Its nearest relative in the eastern hemisphere is the baobab tree. It is a relative of the "ceiba" (*Bombax*) and "quipo" (*Cavanillesia*), of tropical America.

The species of this genus most frequently occur in the lowlands and foothills, though rarely, if ever, where the soil is at all affected by brackish or salt water. They have not been discovered in the higher altitudes, that is, at more than 1,000 meters above sea level.

Balsa is usually a second-growth tree, though it does occur as an isolated tree in the primeval forest. It appears promptly and abundantly where clearings have been made by natural agencies, such as floods and fires, or by human cultivations. In this respect it might properly be called a tree "weed." The natural seeding in some places produces such an abundance of young plants as to suggest weeds in a neglected garden. The tree's growth is very rapid. During the first five or six years of its life it may attain a trunk diameter of 60 to 75 cm., an average increase in thickness of 12 or 13 cm. per year. It also grows very rapidly in height, often attaining under favorable conditions 16 or 20 meters in five or six years. This gives it a place among the most rapidly growing trees known, if indeed it is not the most rapid of all.

In the natural state, the wood is very perishable. One rarely sees the remains of trees of balsa in the tropical forests. They decay with apparently the same rapidity as a cotton fabric; the wood absorbs moisture readily and shrinks and warps badly. This is due undoubtedly to the feeble lignification of the cell walls and to the lack of aseptic properties such as the timber of oak and pine possess. It was only when the engineers of the

American Balsa Company, after protracted investigation and experiments, overcame these defects that the wood could be fabricated into valuable products.

The leaves of *Ochroma*, even on an individual tree, are variable. The seedlings of the different species are much more difficult to distinguish, one from the other, than are the mature trees. Even in the case of two species so distinct as *O. concolor* and *O. limonensis* the seedlings are very much alike. We have based our descriptions upon the leaves of mature trees. The flowers, however, are characteristic for each of the several species, though they vary in shape, size, and texture.

TABLE 1.

APPROXIMATE TIME OF FLOWERING AND FRUITING OF OCHROMA

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
concolor			Fl.	Fl.	Fr.	Fr.						
lagopus				Fl.	Fl.	Fr.	Fr.					
limonensis							Fl.	Fl.	Fr.	Fr.		
grandiflora									Fl.	Fl.	Fr.	Fr.
tomentosa			Fl.?					Fl.	Fl.	Fr.	Fr.	
velutina		Fl.	Fl.	Fr.	Fr.							
bicolor	Fl.	Fl.	Fr.	Fr.								
boliviana								Fl.	Fl.	Fr.	Fr.	
obtusa			Fl.	Fl.	Fr.	Fr.						

The species of *Ochroma* differentiate into two classes as regards time of flowering and fruiting. In one group the fructification takes place in the months of November and April; in the other flowers and fruits develop from May to October.

Table 1 is based on our observations in Central America, supplemented by an examination of herbarium specimens and notes by collectors. Five of the species bear flowers and fruit in one season of the year and four in the other season. So far as we could learn, the season of flowering is clearly marked. For example, no flowers or fruit were to be found on the Limón balsa (*O. limonensis*) from December to March, while both were present in profusion from May to August. On the other hand no flowers or fruit were to be found on the Guapiles balsa (*O. bicolor*) from May to August, but an abundance occurs from

November to February. These species grow in contiguous regions and, though they may overlap somewhat in distribution, they are nevertheless distinguished by well marked morphological characters.

With the exception of *O. limonensis* all these species flower and fruit in the dry season of their respective regions. In northeastern Costa Rica there is no well defined dry season and this probably accounts for the exceptional flowering period of *O. limonensis*.

KEY TO SPECIES

Calyx lobes carinate. Outer sepals triangular acuminate.
Leaves thin, green on both sides, conspicuously 5 to 7-lobed, glabrous or nearly so.....1. *O. concolor.*
Leaves thick, rusty-pubescent, at least beneath, obsoletely 3 to 5-lobed.
Flowers 10 cm. long.....2. *O. lagopus.*
Flowers 15 cm. long or more.
Calyx tube cylindric.....3. *O. limonensis.*
Calyx tube widened upward.....4. *O. grandiflora.*
Calyx lobes not carinate.
Leaves repand-dentate.....5. *O. tomentosa.*
Leaves not repand-dentate.
Calyx lobes triangular, acute, coriaceous.
Leaves rusty-tomentose on both sides, the hairs 5 to 7-(mostly 6)branched.....6. *O. velutina.*
Leaves glabrous and dark green above, white and stellate-pubescent beneath, the hairs 10 to 15-(mostly 12)branched. 7. *O. bicolor.*
Calyx lobes elliptic or orbicular, obtuse, herbaceous.
Calyx lobes elliptic; leaves densely velutinous beneath. 8. *O. boliviana.*
Calyx lobes orbicular; leaves scantily pubescent beneath. 9. *O. obtusa.*

1. **Ochroma concolor,** n. sp. BARRIOS BALSA.

A tree attaining 25 meters in height and 1 meter in diameter, in woodlands developing a long, smooth trunk, in the open a short trunk and a round, symmetrical top; heartwood in older trees red, wet, and heavy, the wood of young trees white and light; leaves thin and membranous, large and conspicuously lobed, with 5 to 7 acute lobes separated by broad, convex sinuses, green and glabrous on both sides except for a few tufts of brownish tomentum on the primary veins beneath; stipules large, ovate, with prominent midribs; flowers 10 cm. long, glabrous; calyx tube 6 cm. long, glabrous within; calyx lobes very dissimilar, 2 cm. long, the outer 2 acuminate, with a prominent

keel on the back, the inner 3 oblong, keeled, with expanded margin; pod 12 cm. long; seed with a short, stout funicle.

Type in the U. S. National Herbarium, no. 862345, collected at Trece Aguas, Alta Verapaz, Guatemala, May 9, 1914, by O. F. Cook and C. B. Doyle (no. 82). The following Guatemalan specimens in the National Herbarium also represent this species: *Mrs. William Owen* 11, 11A; *Goll* 230. The flowers are borne in December and January and the fruit in February and March.

This species is very different from any other of the genus. It is known only from the country surrounding the head of the Bay of Honduras. It has not been reported from outside of Guatemala, but undoubtedly grows in adjacent Honduras and British Honduras, and in all probability in southern Yucatán. It occurs throughout the lower Motagua Valley from above Quirigua to the sea. Well developed trees are found on the reservation containing the Maya ruins, near Quirigua. It also occurs rather abundantly in the valley of Lake Izabal and the Golfete.

Goll reports the name "kapok;" Mrs. Owen gives the Indian names "jujul" and "puj." The local names given us were "lana" and "cajeto."

There are two distinct species of *Ochroma* in northeastern Guatemala. In addition to the one characterized above, there is another which is probably specifically identical with the species of northern Costa Rica. *Ochroma concolor* grows on lower ground than the Costa Rican species or, indeed, than any other species of *Ochroma* known to us. In the Great Swamp, along the San Francisco del Mar River, east of Barrios and west of the mouth of the Motagua, many large trees occur on ground that is inundated a considerable portion of the year. The species occurs also on higher ground, as on the hospital grounds at Quirigua, as well as near Virginia and along the Tomeja River.

2. **Ochroma lagopus** Swartz, Prodr. Veg. Ind. Occ. 98. 1788.

WEST INDIAN BALSA.

Up to the present time, all the species of the genus except *Ochroma tomentosa* Willd. have been included under this name, which, there is every reason to believe, should be restricted to include only forms that grow in the West Indies.

Smaller in size than the preceding species, usually not exceeding 30 cm. in diameter and 18 meters in height; leaf blades small (15 to 20 cm.), brown-tomentose to nearly glabrous; flowers small, 10 cm. long; calyx tube 6 cm. long, the lobes 2.5 cm. long, 2 cm. wide at the base and 4.5 cm. at the summit, prominently carinate on the back.—Flowers borne in February and March; fruit in April and May.

Known in Cuba as "lanero;" in Jamaica as "corkwood," "down-tree," "dum," and "bombast mahoe."

CUBA: Eastern Cuba, 1856–57, *C. Wright* 38; San Luis, Oriente, April 2, 1909, *Britton* 2334; Sevilla Estate near Santiago, August 31, 1906, *N. Taylor* 140 (a tree 30 meters high, the trunk 28 cm. in diameter).

HISPANIOLA: Taradia, prope Barahona, 1910, *Tuerckheim* 2826; without locality, *Wright, Parry & Brummel* 20, 21.

PORTO RICO: Manati, April 4, 1887, *Sintenis* 6766; Utuado, March, 1906, *M. A. Howe;* San Juan, December, 1898, *Dignowitz* 780.

JAMAICA: Castleton, March 21, 1915, *Harris* 11962.

3. **Ochroma limonensis,** n. sp. LIMÓN BALSA.

A tree of very rapid growth, attaining large dimensions, up to a meter in diameter and 30 meters in height; bark gray, somewhat mottled; wood white, the annual rings indistinguishable; leaves large, nearly orbicular, 25 cm. across, obsoletely 3- to 5-lobed (the margin entire), nearly or quite glabrous above, refescent-tomentose beneath; hairs 7 to 10-(mostly 8)branched; flowers 18 cm. long, yellowish white; calyx tube 9 cm. long, cylindric, glabrous but warty on the outside, hairy within; calyx lobes acuminate, carinate on the back, 4 cm. long, 2 cm. wide at the base, the inner with feltlike margins; pods, 15 cm. long; funicle about half as long as the seed.—Flowers borne in May and June; fruit in July and August.

This is the balsa of the lowlands of the Caribbean coast of Costa Rica and Panama, extending as far west as the Reventazón River, Costa Rica, and east into Panama. Fine groves have developed along the Banana, Bananito, Estrella, and Sixaola Rivers. Our nos. 1, 2, and 3 are of this species, no. 1, collected on San Clemente Farm east of the Bananito River, Costa Rica, being the type. No. 2 is from a tree at Zent; no. 3 was collected near Moin Junction. The Zent tree is of special interest. It was started as a seedling in April, 1915, and was photographed September 15th of that year. When measured by us in May, 1918, it was 16 inches in diameter, and had therefore grown at the rate of five inches per year. Local observers agree that this individual is not in any way exceptional.

4. **Ochroma grandiflora,** n. sp. ECUADOR BALSA.

A tall tree with mottled gray bark and very light wood; leaves on mature trees nearly entire, orbicular, 20 cm. wide, on young trees lobed, very large (up to 90 cm.), rufescent beneath, glabrous above; flowers 15 to 18 cm. long, showy; calyx tube 7 cm. long, spreading above, 3 cm. wide at the base, 7 cm. wide at the top, granular-puberulent outside, hairy within; calyx lobes 4 cm. long, 3 cm. wide at the base, carinate, the inner ones broadly margined; petals large and showy, exceeding the stamens and style, the limb 5 cm. broad, gradually

narrowing into a broad claw 2 cm. wide, prominently parallel-veined.—Flowering in July and August; fruiting in September and October.

Type in the U. S. National Herbarium, collected below Huigra, Ecuador, in 1918, by J. N. Rose (no. 22,604). Also collected at Hacienda La Josefina, San Carlos, Ecuador, September, 1918, by Capt. Claussen.

5. **Ochroma tomentosa** Willd. Enum. Hort. Berol. 695. 1809

HUMBOLDT'S BALSA.

The original description of this species is as follows: "O. foliis cordatis subtrilobis repandis, subtus tomentosis." It was based on specimens collected by Humboldt and Bonpland in "America Meridionali," and was reported from Colombia by Triana and Planchon in 1862.[1] It has been collected recently by Rusby and Pennell (no. 271), July 24, 1917, at Quebrada de Angeles, above Natagaina, Department of Huila, Colombia, and also by Pennell (no. 3557), at Honda, Department of Tolima, Colombia. The collectors noted it as a large tree with white petals.

The calyx tube is very coarsely and densely tomentose with brown hairs; the tube is short and broad. Most characteristic of the species, however, are the repand dentations, 1 cm. apart, evenly distributed around the margin of the leaf, giving it the appearance of the leaf of *Populus grandidentata*.

Ochroma tomentosa has not been reported beyond the limits of the upper Magdalena River in Colombia, a region through which Humboldt's expedition passed.

6. **Ochroma velutina**, n. sp. RED PACIFIC COAST BALSA.

Wide-spreading tree, usually bifurcately branched, with smooth, light gray bark; heartwood reddish; young shoots and leaves densely velvety-tomentose; leaves ovate, with wide sinuses at the base, obsoletely 3-lobed, or more often entire, the lobes when present rounded; blades variable in size, thick and firm, longer than broad; stipules brownish tomentose, 1 to 1.5 cm. long and half as wide, when large inclined to be auriculate and notched at the side, when small, oblong and rounded at the apex; flowers small, about 8 cm. long, the pedicels of about the same length; calyx tube firm and woody, cylindric, 4 cm. long, glabrous externally at maturity, within densely clothed with ascending appressed brown hairs; calyx lobes very dissimilar, the 2 outer triangular, 1.5 cm. long, the inner 2.5 cm. long, with wide felt-like margins; petals about 8 cm. long, broadened toward the apex; pod 10 to 15 cm. long, tapering at the ends.

Type in the U. S. National Herbarium, no. 472290, collected "dans les forêts et pâturages de Nicoya," Costa Rica, February, 1900, by

[1] Ann. Sci. Nat. IV. Bot. 17: 323. 1862.

A. Tonduz (no. 13,498). The following additional specimens have been seen: El Salvador, *Renson* 86; Bismarck, Panama, *Williams* 607; Ancón Hill, Panama, *Bro. Celestine* 119. The following are our own collections: Orotina, 94; Zapotal, 6; Abangarez Pueblo, 5; Tempisque, 113, 170, 189; all from Costa Rica. We collected it also at Escuintla, Guatemala.

The flowers are borne in December, January, and February. The fruit matures in February, March, and April, that is, the dry season of the region where the tree occurs.

This is the smallest-flowered species known. It is widely distributed on the Pacific slope of Central America from sea-level up to 500 or 600 meters and may be the form mentioned by Tonduz as "caractéristique pour la zone inférieur côtes nord et ouest de Cocos Island, alt. 0–100 m."

Ochroma velutina differs from the other species in the following respects: Its wood is harder and heavier; the leaves are densely velutinous on both sides, are nearly or more often quite entire, and are noticeably longer than broad, with a wide sinus at the base; the flowers are small; and the calyx tube is cylindric, firm, and woody.

7. **Ochroma bicolor**, n. sp. GUAPILES BALSA.

A tree attaining large size, 25 meters high and 1 meter in diameter, with long, straight bole in the forest, and excurrent in habit when growing in the open; bark mottled gray and white; leaves chalky white with minute stellate hairs beneath, these 12 to 20-(mostly 20)branched, dark, glistening green and glabrous above, thick and leathery, tending to be acuminate, especially on the older trees, nearly as broad as long, about 32 cm. across, with 2 to 4 obsolete primary lobes on each side, the margin between these usually regularly and very shallowly sinuate-lobed, with a vein terminating in each secondary lobe, the marginal vein prominent; flowers with petals strongly reflexed at anthesis, 10 cm. long with petals extended; calyx tube firm, 5.5 to 6 cm. long, granular-puberulent outside, silvery-sericeous within; calyx lobes 1.5 cm. long, plane on the back, triangular, acute, the inner ones with felted margins; petals white, abruptly expanded above, the claw 1 cm. broad, the limb orbicular, 3 cm. in diameter; stamen tube and stigma equal in length, slightly shorter than the extended petals, much exceeding the recurved petals at anthesis; mass of anthers as broad as long; pod, 16 cm. long; down, light-colored; seed with very short or obsolete funicle, 4 mm. long, 2 mm. thick.—Flowering in November and December; fruiting in January, February, and March.

The type is our no. 10, collected on the grounds of the residence of Superintendent J. H. Wilson of the United Fruit Company, at Guapiles, Costa Rica. We also collected this species at Guácimo, along the Parisima River. It is abundant throughout the whole region known

as the Llanuras de Santa Clara, Costa Rica, at a general elevation of about 250 meters. The only specimens we have seen in herbaria are Captain J. D. Smith's no. 6,453, from La Emilia, Costa Rica, collected in April, 1896, and C. F. Baker's no. 2,149, from Chinandega, Nicaragua.

This species is very abundant in northern Costa Rica from the Reventazón River north to Lake Nicaragua. It grows on higher land than the Limón balsa, and while the two species grow in contiguous districts they do not overlap to any great extent. It extends up the Turrialba Volcano to a height of a thousand meters or more, and undoubtedly occurs on the whole northerly slope of the central cordillera of Costa Rica.

When in leaf only, and especially with young trees, this species closely resembles the Limón balsa, but the flowers are markedly different. The pubescence, general outline, and texture of the leaves, as well as the period of flowering, clearly distinguish the two species.

8. **Ochroma boliviana,** n. sp. BOLIVIAN BALSA.

A tree 8 to 10 meters high, the trunk 20 to 25 cm. in diameter; leaves obsoletely 3-lobed (the margin undulate but not denticulate), nearly orbicular, 30 cm. in diameter, glabrous and dark green above, tawny white and densely velvety beneath; calyx tube 5.5 cm. long, granular-puberulent outside and densely white-tomentose within; calyx lobes herbaceous-membranous, elliptic, acute, 4 cm. long, 2 cm. wide, the inner ones not sharply differentiated into margin and keel, stellate-pubescent without, densely white-tomentose within; petals conspicuously parallel-veined and expanded above, protruding 5 cm. beyond the calyx lobes, 5 cm. broad above.

Evidently very showy in flower, suggesting the northern tulip tree. Flowers borne in July and August; fruit in August and September.

Known only from the following specimens, in the herbarium of the New York Botanical Garden, all from the northeastern part of Bolivia in the vicinity of Mapiri: Mapiri, July–August, 1892, *Bang* 1501 (type); junction of the rivers Beni and Madre de Dios, August, 1886, *Rusby* 1927; Mapiri, September 23, 1901, *Williams* 714; "San Carlos region de Mapiri, 15° lat. sur," September, 1907, *Buchtien.* Vernacular names "tami" and "palo de balsa."

9. **Ochroma obtusa,** n. sp. SANTA MARTA BALSA.

A tree 10 to 15 meters high; twigs glabrate; leaves 20 by 20 cm., conspicuously 3-lobed, the sides of the lobes straight, giving the appearance of a maple leaf, glabrous or nearly so above, scantily covered with slender branched hairs beneath; flower, 14 cm. long; calyx tube 5 cm. long, spreading above, at first granular-puberulent, becoming glabrate; calyx lobes nearly uniform in outline, not carinate, nearly as broad as long, 3 cm. long, densely tomentose on back, ciliate; petals

surpassing the calyx lobes, oblong-spatulate, 3.5 cm. wide, conspicuously parallel-veined.

Type in the herbarium of the New York Botanical Garden, collected at Mamatoca, Santa Marta, Colombia, 1898–99, by Herbert H. Smith (no. 829). The collector states that the tree is "common locally near streams, at 500 to 2,500 feet. Flowers in December and January. Petals pale yellowish. The silk enveloping the seeds is used for pillows, etc., and is sold in the market (as 'lana') at Santa Marta. It is collected in May, when it is found scattered on the ground under the trees." We also refer to this species Broadway no. 4,418, collected March 8, 1913, in Tobago; also Père Duss. no. 3,634, April 10, 1895, from Guadelupe, and his no. 185, from Martinique, although the last two collections do not entirely agree with the type.

ORNITHOLOGY.—*Diagnosis of a new genus of Bucerotidae.*

HARRY C. OBERHOLSER, Biological Survey.

The family Bucerotidae at the present time is represented in the Philippine Islands by four genera. One of these, however, *Hydrocorax* Brisson, proves to be composite. This genus *Hydrocorax* was first instituted by Brisson for *Buceros hydrocorax* Linnaeus;[1] much later (1880) another species, *Buceros mindanensis* Tweeddale, was added by Elliot; and subsequently still another, *Buceros semigaleatus* Tweeddale, was referred to this group. The last-mentioned species, however, is clearly not congeneric, and should form the type of a separate monotypic genus which we here call:

Platycorax,[2] gen. nov.

Diagnosis.—Similar to *Hydrocorax* Brisson, but casque entirely different: in superior aspect smaller, shorter, and narrower in general outline (although the bird is actually larger), posteriorly narrower and not so truncate, the anterior portion sharply much constricted, so that the anterior third is much narrower than in *Hydrocorax*, and concave in outline instead of evenly convex throughout its length: in lateral aspect completely flattened anteriorly, with no vertical projection, the whole bill therefore much less in height;[3] feathered interramal space relatively as well as actually broader.

Type.—*Buceros semigaleatus* Tweeddale.

[1] *Hydrocorax* Brisson, Ornith. 4: 565. 1760. (Type by tautonymy, *Buceros hydrocorax* Linnaeus.)

[2] πλατύς, latus; κοραξ, corvus.

[3] These differences in the shape of the casque are well shown by the figures given in the Proceedings of the Zoological Society of London for 1878, pages 278–279.